

AMENDMENTS TO CLAIMS

This listing of claims will replace all prior versions, and listing, of claims in the application:

Listing of claims:

1. (Currently amended) An image sensor having a plurality of pixels, each pixel comprising:

a photocell which receives light in response to a first shutter control signal and generates an analog signal corresponding to a quantity of the received light;

a latch type comparator which compares the analog signal of the photocell and an analog signal of a photocell of an adjacent ~~pixel and pixel~~, generates a 1-bit digital signal having a value of the compared result, comparison and maintains the 1-bit digital signal generated by the comparison until a second shutter control signal subsequent to the first shutter control signal is received; and

a switch which outputs the 1-bit digital signal of the latch type comparator ~~under the control of the pixel select signal~~ based on a pixel select signal;

~~wherein the digital signal is a digital signal having a 1-bit structure.~~

2. (Canceled)

3. (Canceled)

4. (Previously presented) The image sensor as claimed in claim 1, wherein the analog signal of the photocell of the adjacent pixel is a reference voltage.

5. (Original) The image sensor as claimed in claim 1, wherein the photocell is a photo diode that generates a photocurrent corresponding to the received quantity of light.

6. (Previously presented) The image sensor as claimed in claim 1, wherein the latch type comparator outputs a first signal when the analog signal of the photocell is greater than the analog signal of the photocell of the adjacent pixel and outputs a second signal when the analog signal of the photocell is less than the analog signal of the photocell of the adjacent pixel.

7-14. (Canceled)

15. (Currently amended) An optical pointing system comprising:

a) a plurality of pixels, each ~~having comprising~~

a photocell which receives light in response to a first shutter control signal and generates an analog signal corresponding to a quantity of the received light,

a latch type comparator which compares the analog signal of the photocell and an analog signal of a photocell of an adjacent ~~pixel and pixel~~, generates a 1-bit digital signal having a value of the compared result ~~comparison and maintains the 1-bit digital signal generated by the comparison until a second shutter control signal subsequent to the first shutter control signal is received, and~~

a switch which outputs the 1-bit digital signal of the latch type comparator ~~under the control of the pixel select signal~~ based on a pixel select signal;

b) an image processor which calculates a movement value ~~using the~~ based on a plurality of the 1-bit digital signals outputted from the plurality of pixels and generates ~~a the~~ pixel select signal and a shutter control information signal based on the movement value; and

c) a shutter control circuit which generates at least one of the first shutter control signal and the second shutter control signal corresponding to based on the shutter control information signal of the image processor;

~~wherein the digital signal is a digital signal having a 1-bit structure.~~

16-19. (Canceled)

20. (New) An optical pointing system comprising:

a) a plurality of pixels, each comprising

a photocell which receives light in response to a first shutter control signal and generates an analog signal corresponding to a quantity of the received light,

a latch type comparator which compares the analog signal of the photocell and an analog signal of a photocell of an adjacent pixel, generates a 1-bit digital signal having a value of the comparison and maintains the 1-bit digital signal generated by the comparison until a second shutter control signal subsequent to the first shutter control signal is received, and

a switch which outputs the 1-bit digital signal of the latch type comparator based on a pixel select signal;

b) an image processor which calculates a movement value based on a plurality of the 1-bit digital signals outputted from the plurality of pixels and generates the pixel select signal and a shutter control information signal based on the movement value; and

c) a shutter control circuit which generates at least one of the first shutter control signal and the second shutter control signal based on the shutter control information signal of the image processor, wherein the at least one of the first shutter control signal and the second shutter control signal comprises a first signal based on a period in which the shutter is turned on and a second signal based on an initial operation of the image processor.